

# Hobbies

## WEEKLY

March 1st 1950

Price Fourpence

### CONTENTS

	Page
A Standard Lamp	337
Perspex Display Signs	339
A Model Village	340
Toy Garage	341
Simple Inspection Lamp	342
Kitchen Stool	343
Chemistry Magic	344
Table Writing Desk	345
Home Electrical Repairs	346
Intarsia Work	347
Revolving Lamp	348
New Stamp Issues	349

Vol. 109 No. 2835

## How to make an attractive STANDARD LAMP

**T**HE graceful looking standard lamp shown in our illustration at Fig. 1, would be equally as useful alongside the piano as at the back of the arm chair. Such a lamp as this is excellent as an aid for reading when the main lamp in the room is not needed. It is, too, very restful for the eyes, the light being concentrated on the work in hand whether it be music or book reading.

### Straightforward Construction

The work in making one of these lamps is most interesting, and at the same time does not call for any special tools or skilled work. There is scope here for the handy man about the house who has a simple kit of household tools, including, of course, a good fretsaw frame with a few coarse saws.

Work can be commenced upon the base, the general outline and dimensions of which are given in Fig. 2. There are two sturdy crosspieces or rails measuring 18ins. long by 4ins. by 2ins. in cross section, and after they have been cut off squarely and the centres marked across, the halvings are drawn in 1in. each side of the centre line and dropped down on the thickness of the stuff to half the depth to make a sound halving joint, as seen in detail (A), Fig. 3.

### Simple Carpentry

A tenon saw is good for the cutting, while a small chisel would answer for the cleaning out of the unwanted wood. See that the halving joints fit well and accurately together and then glue them firmly. A  $\frac{1}{2}$ in. diameter hole is next bored through the centre of the joint

for the flex to pass through when wiring up the lamp.

### The Feet

To form the feet below the cross rails, cut out four blocks 5ins. by 4ins. by  $\frac{1}{2}$ in. or  $\frac{3}{4}$ in. thick. Round them off on three edges and then glue and screw them to the extremities of the cross rails. Next make the upper members of the cross feet, the two rails (B), as seen in Fig. 3. These are each 17ins. long by 3ins. wide by 1in. thick, and on each, two mortises are to be marked out, as the detail shows, 3ins. in from the ends of the rails and the mortises are 3ins. long and 1in. wide. Cut them through with a coarse fretsaw, keeping just inside the drawn lines so as to insure a tight fit when the brackets are inserted.

Bore a hole in the centre of the rails and then halve them together in a similar manner to the thicker rails beneath. Glue and screw the rails to those below and finally clean up all the surfaces and round off the sharp edges with glass-paper.

### The Pillar

The centre post can next be made, and this can be cut from the solid wood of  $2\frac{1}{2}$ in. square stuff, or it can be made up from four separate pieces of  $\frac{3}{4}$ in. wood glued up to form the square, shown in the detail Fig. 4.

The convenience of making the post hollow, as just described, will be found in that the flex can be taken up from floor level and threaded through the post to the bulb holder above. Whereas if the post were solid the wire would have to hang loosely from a wall plug

and run direct and under the shade to the bulb holder, a hole being made near the top of the post for the insertion of the wire.

Whichever method is adopted the upright will appear the same and the corners can be planed off to a chamfer as shown, this work helping to lighten the appearance somewhat.

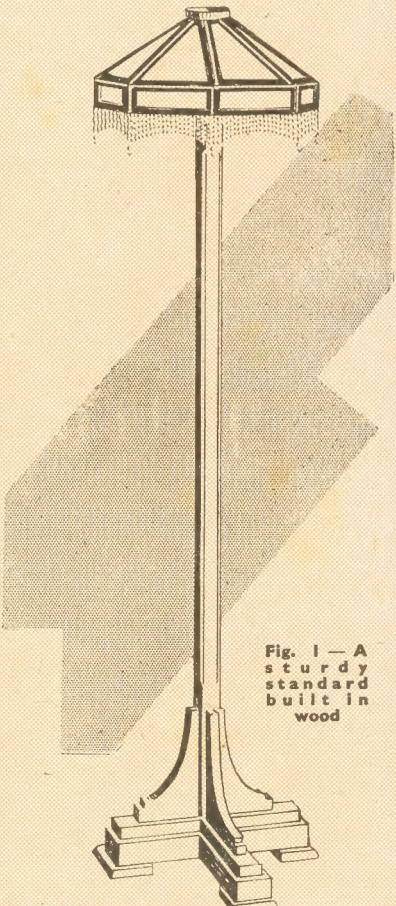


Fig. 1 — A sturdy standard built-in wood

The post will measure 5ft. 2ins. long and it will be 2½ins. square. The four upright bracket-shaped pieces into which the post fits are each 9ins. by 5ins. by 1in. thick and they will be cut to shape, as the detail Fig. 5 shows.

### The Shaping

Here is given a squared diagram with 1in. squares through which pass the outline of the shaping. Set out the

cessing. The recesses in the posts would then have to be carefully drawn out 8ins. long by 1in. wide by the depth required.

Glue the brackets into their mortises and make sure they stand absolutely square and upright, and when the glue has hardened, insert the post, adding the glue in the recesses if these have been included in the work. Add a round-head screw or wood dowel pin through the top of each bracket as shown in the detail.

All kinds and shapes of shades can be purchased now, and many would not, therefore, spend the time and trouble in making one up specially for this lamp standard. There may be some readers on the other hand, who, having made the lamp standard, would like to undertake

of the shade towards the top, so that when eight of these single sections are laid side by side, as in the layout Fig. 6, the parts are ready for scoring and cutting.

By scoring is meant those lines between each panel is cut in very lightly with the tip of a knife, thus enabling a bend to be made exactly along a line. The interior of each panel is cut away as well as the smaller front panel which hangs down, as seen in the front view Fig. 2. On the 8th panel in Fig. 6 is seen a marginal strip, this, when the whole is angled up, is glued to the edge of the 1st panel. Gummed tape cut to length required and put at the back of joins and creases help to strengthen the shade a good deal.

### The Wiring

A flat, circular or octagonal disc is glued to the main top of the shade and the post. The socket and bulb is fixed to one edge of the post, not to the top as is usually done, the wiring then being

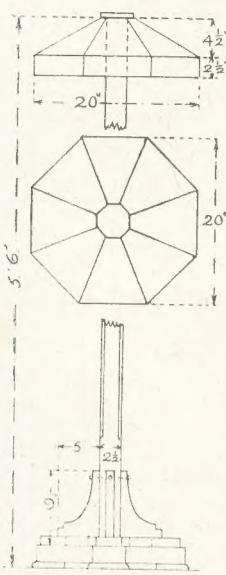


Fig. 2 — Section of standard and base

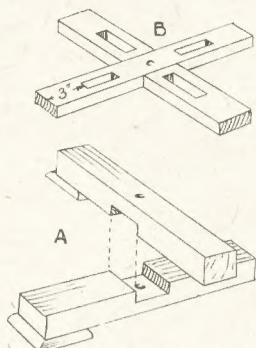


Fig. 3—Construction of base parts

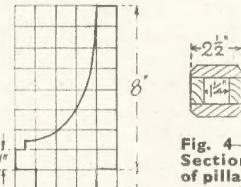


Fig. 4—Section of pillar

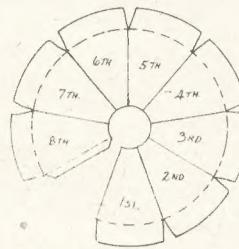


Fig. 5—Shape of support

squares on paper and draw in the outline following carefully each square from the smaller printed outline. Transfer the outline on to the wood and cut round in the usual manner. Clean up the edges with glasspaper and use the one cut-out bracket as a template for drawing round to produce the other three brackets.

It would make a stiffer fixing to the post if the brackets were recessed or housed into it for a depth of 1in. or 1½in. This amount would then have to be allowed and added on each back edge of the brackets to allow for re-

### Tent Grease Remover

**P**LEASE tell me how to remove what appear to be grease spots, from the canvas of a tent, without harming the canvas. (R.L.—Bozate).

**T**O remove grease spots from tent canvas is not easy, especially if the grease goes right through and shows on the inside. If a very old, dirty tent, why not scrap it for a new one? Or, you could try scrubbing with hot water and soap, adding a little Parazone to the water. Afterwards you could re-proof the tent on the outside with one of the preparations sold by the camp outfitters for that purpose. This would preserve the canvas and keep it rain-proof.

Alternately, if your tent is so dirty

making the shade as well so that it could be said the complete article was wholly home-made.

We suggest, therefore, a way of making a simple octagonal shade 20ins. square and 7ins. deep. A piece of cardboard about 29ins. square will be wanted and the general lay-out of each section forming the shade can be seen in Fig. 6.

### Shade Shape

The method of drawing any one of the sections is shown in Fig. 7. This outline is drawn to scale and allows for the 'rise'

that it bothers you, it might be better if you dyed it a green or khaki colour. It is a good plan to dye it a darker colour than you would eventually like to have it, because it will soon fade a little after a time in the sunshine. Still another idea is to give it a coat of paint—the sort of stuff used to camouflage tents during the war. This would, no doubt, cover the greasy marks, and your tent would no longer be an eyesore.

\* \* \*

### Drilling a Vase

**I**HAVE a stone vase in which I wish to drill a hole for the purpose of passing a flex through, but up to the present I have failed. (A.B.—Leabrooks).

carried through and brought down the centre of the post. If the post is solid, however, then means must be found for setting out the holder and bulb to allow the outside wiring as previously suggested.

Cover the card frame of the shade inside with tinted thin paper so that the light penetrates sufficiently. The card frame could be blacked over with Indian ink or egg-shell black paint. Paint or stain and varnish the woodwork to choice. If the wood is all one class of material, such as oak or beech, stain it, but if odd wood colour with enamel.

**Y**OUR best plan would be to use a plain copper rod as a drill, and to charge it with diamond dust. This used with water as a lubricant, will enable you to make the requisite hole. In the absence of diamond dust, you could use very coarse carborundum grinding powder, but it will take much longer.

A helpful plan is to make the hole tapered, larger at the outside, so the drill does not tend to bind so much in the walls of the hole.

If the vase is very strong and heavy, you could support it (bottom upwards) on a sand bag and use a Rawlplug 'jumper' and hammer to drill the hole, but, of course, there is more risk of breakage.

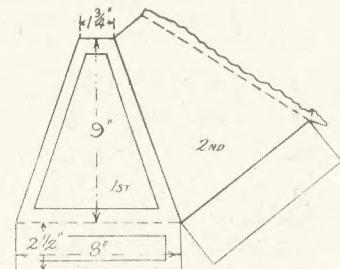


Fig. 6—Shaped shade panels

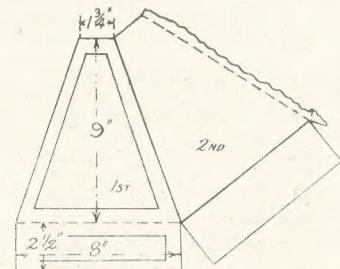


Fig. 7—Details of a panel shape

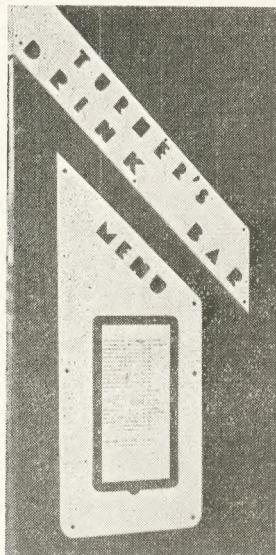
# You should consider the possibility of making PERSPEX DISPLAY SIGNS

THE making of Perspex signs for use as house nameplates or for commercial purposes such as shop nameplates or for display on vehicles, is both fascinating and lucrative. Few tools are required and though the outlay for Perspex may be higher than that needed for, say, wooden signs, the finished jobs are more attractive, more durable, cleaner and have a far greater 'pull' should the craftsman wish to make a commercial proposition out of his work.

## Simple Type First

Those who have never worked in Perspex are advised to attempt the simplest type of sign first, an idea of which is given in Fig. 1.

This is a house nameplate designed to hang in a porch. The background shape, of course, is optional. On this type of



A weatherproof changeable menu sign

sign the letters are built separately from straight lengths of  $\frac{1}{8}$  in. thick material either  $\frac{3}{16}$  in. or  $\frac{1}{2}$  in. wide.

No curves are introduced and the letters are fixed to the background edge down, thus giving an attractive raised effect especially when viewed obliquely.

## Preparing the Strips

Perspex is obtained in convenient areas and strips for letters can easily be cut from a piece 1 ft. square. The material is protected on both surfaces with white paper which peels off. On this the widths of the strips can be marked off, using fine pencil lines. A medium tooth fretsaw blade is used to cut the strips.

A fretsaw machine is ideal for stripping purposes. By this method, using a

straight-edge guide (hardwood 8 ins. by 1 in. by  $\frac{1}{2}$  in.) clamped ('C' clamps) to the machine table at the required distance from the blade, strips can be run off quickly without any pre-marking.

One edge of each strip should be finished and polished. The finishing is easily done on a fine sanding disc, but if no such aid is available, the edges should be tried with a flat Ward-type file and then vigorously finished off with a sanding block.

To polish the edge, commercial Perspex polish can be used in conjunction with cotton wool. An equally good and much cheaper polishing medium is wadding impregnated with metal polish of the Duraglit type. Several vigorous strokes with a small piece are sufficient to impart a mirror-like finish.

## Making the Letters

All letters are built up over the top of full-size drawings. Letter styles can be copied from books and a drawing of each letter required is made in pencil on a piece of white paper. As a guide to the location of joints, reference should be made to the accompanying sketches.

The drawing is pinned to a flat board and the various lengths required for each letter can be marked off by holding the strips over the drawings and using a scribe. Separate lengths can be cut by using a hacksaw.

Each letter is assembled over the drawing to ensure accuracy and uniformity. Special Perspex cement is used to join the pieces. A little is required at each joint and none should be allowed to spread to the polished surfaces. This cement 'fuses' the material together and effects a rock-hard union in five minutes. If desired the sharp corners of all letters can be rounded with a file, sanded and re-polished.

Before the letters are fixed to the background the latter should be washed in warm soapy water, rinsed and dried on



A striking example of a shop sign executed by the author

a fine cotton towel. Incidentally, the thickness of the background depends upon the area required. For small signs up to 2 ft. by 1 ft.,  $\frac{1}{8}$  in. is suitable. For larger signs  $\frac{1}{16}$  in. or  $\frac{1}{4}$  in. Perspex should be used.

## Fixing the Letters

To fix the letters to the background, cement is used again. But before any is applied, the letters should be arranged on the background, a wooden straight edge serving to keep the letters level.

When all the letters have been desirably spaced one letter at a time can be fixed by applying a thin film of cement to the unpolished edge. Then gently press the letter to the background. The position of the letters can be marked on the surface of the Perspex with a soft pencil.

To complete the sign the edges of the backplate should be highly polished as previously described, and the fixing holes drilled. An ordinary twist drill dipped in water should be used for drilling.

If the sign is to be fastened to a wooden background (instead of being hung) the fixing holes should be at least twice the diameter of the screws to avoid distortion due to expansion. Chromium cup washers can be used in conjunction with the screws and spacing of the holes should be 12 ins.

For signs up to about 12 ins. square,  $\frac{1}{16}$  in. thick Perspex may be used to great

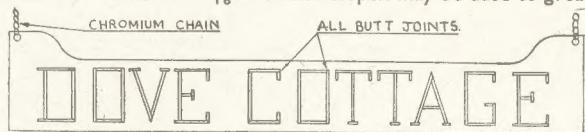


Fig. 1—Simple forms of letter outline

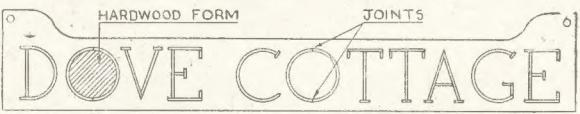


Fig. 2—A rounded form with former and joints

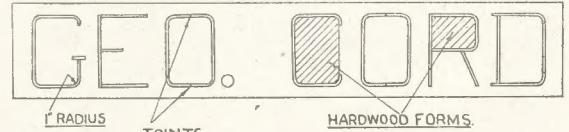


Fig. 3—A suitable lettering for a shop front

effect for the letters. Here it is a good idea to employ chloroform to fix the letters to the background. With this method perfectly sharp lines result at the junction of the letters and the background since there is no surplus cement to 'bubble' on edges and in corners.

Chloroform is poured into a shallow tin, sufficient to take the largest letter, with the bottom only just covered. One letter at a time is placed in the tin for about 15 seconds and then removed immediately and held in place on the background. In less than a minute the letter will be rigid.

#### Curved Letters

Though the signs described are most effective, those employing curved letters have an added attraction. There are many styles of letters with curves and those shown in Figs. 2 and 3 are just two that lend themselves easily to sign work. Those in Fig. 3 are recommended for shop nameplates.

The methods used in their production can be applied to many other letter types. First of all strips of Perspex are prepared as previously described. These are heated and wrapped round hard wood formers made from  $\frac{1}{8}$ in. thick timber.

It will be found that in most signs, perhaps, two or at the most three such formers will be required. For instance, in Fig. 2 only one is required. The 'D', 'C' and 'G' can all be shaped from the 'O' form. The edges of all formers must be smooth. Though not essential it is preferable to screw the forms to a flat bench or large base.

#### Heating

The strips of Perspex are heated either by laying them on a thin metal plate which in turn is placed over a low burning gas jet or by suspending them vertically in an oven by means of spring clips. The amount of heat required will be found by experiment, but at the correct temperature the Perspex takes about a minute to become quite pliable. Indeed it is a simple matter to tie an ordinary knot on a piece 1ft. long  $\frac{1}{8}$ in. by  $\frac{1}{8}$ in.!

Using an old pair of gloves the strips are removed and quickly and firmly wrapped and held tightly round the forms. When cool the resulting shape will not show the slightest sign of springing back. Any excess can then be cut away to get a true shape. All letters are assembled and fitted as in the first instance.

One other type of sign which should appeal to those with artistic ability is that which embodies letters cut to any style (including script) from  $\frac{1}{8}$ in. thick sheet Perspex. Such things as crests, flowers or other appropriate trimming can also be included.

The drawing is done directly on the protective paper and then cut out in the usual way, filed, sanded and polished. The layout and background shapes are unlimited.

#### General Notes

Small signs with letters assembled vertically (on their bases) on a thin horizontal base are most effective. Painting with coloured plastic solution on Perspex is laborious but outstanding. It is a good idea when cutting strips on a fretmachine to replace the orthodox blade with one from small hacksaw.

Signs for butchers, snack bars, cafes, as well as menu frames are all in demand. Colour effect is to be studied. Red on white is popular for snack bars, especially if mounted in a frame with strip lighting behind. Brick red on salmon pink is for butchers; pale green on black or flesh on maroon for houses.

Get a bright attractive colour which will not clash with existing colouring.

## An interesting piece of landscape modelling is this VILLAGE IN MINIATURE

ALL model makers would be interested in the model village of Bekonscot, at Beaconsfield in Buckinghamshire. This is model making on the grand scale, but there is nothing beyond the skill of the home model maker, who could get many ideas both as to subject and execution.

Bekonscot is an entire village or rather town laid out in charming country surroundings, and complete down to the smallest detail. There is a small charge for admission, and all profits go to charity.

#### Complete with Railway

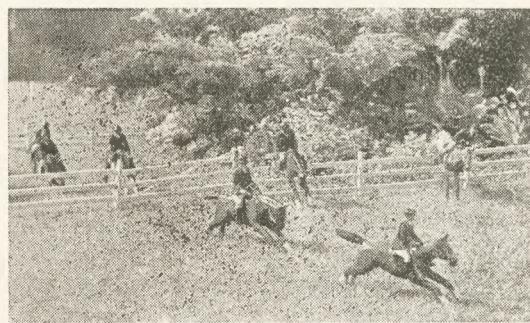
The 'town', which covers 3,000

square yards is served by a miniature railway. This has a terminus and eight stations. The rolling stock is of the latest type, signalling is electric, and the whole, on a tiny scale, is an exact replica of an up-to-date railway system.

Bekonscot is dominated by its Minster, a fine building in Early English style, with stained glass windows. There are several churches and chapels of different denominations.

The High Street is lined by half-timbered houses and shops, of an average height of  $2\frac{1}{2}$  ft. to 3ft. The business part of the town has several hotels, inns, road houses and restaurants, besides a club for the men. It is evidently busy, as there are traffic lights at the cross roads.

Bekonscot has extensive docks, with a considerable amount of shipping, and also has its own

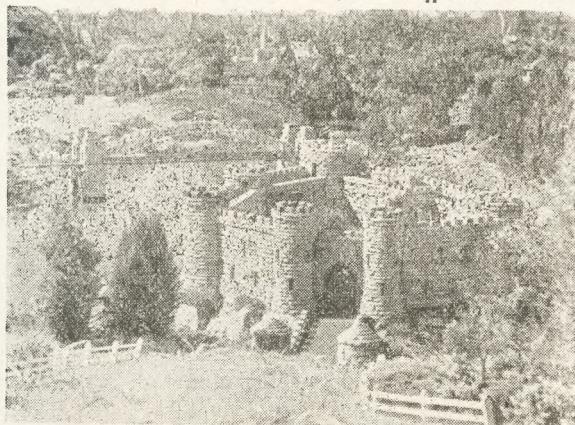


A realistic 'hunt' in progress in miniature

airport. On the outskirts of the town stands the castle, which is a very fine piece of modelling, as you see by the picture. It has a moat and drawbridge and nearby is one of Bekonscot's three windmills. Not far off is the village green, with a game of cricket in progress. There is also a racecourse, and our picture shows the realism of the jumps.

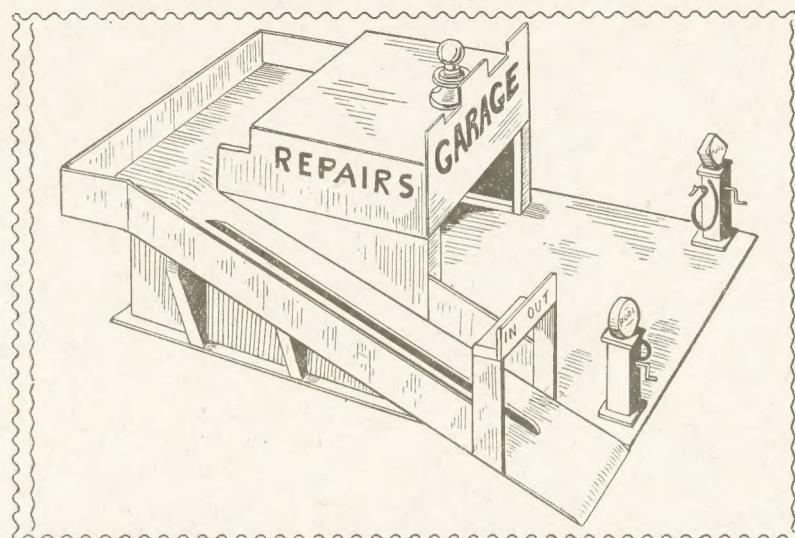
In the suburbs are zoological gardens, and many pretty villas, whilst in the surrounding country are little farms, well stocked with animals.

Few home modellers could undertake so extensive a piece of work, individually, but there is much here that can give many excellent ideas to be carried out, perhaps, on a smaller scale, or by means of the combined effort of a club or group of interested workers and craftsmen.



A view of the miniature castle and houses which average 18ins. high

# From these diagrams and instructions you can easily BUILD A TOY GARAGE



HERE are, of course, many ways of making a Model Garage. One can go to a lot of trouble and expense and make an elaborate affair fitted with every accessory. That type of garage is a model first, and a toy second. The garage described in this article is a simple toy to be played with and is suitable for boys between the ages of four and nine.

The main feature of the toy is the ramp for running cars to the first floor. This is an addition that appeals to most boys, especially those who have seen or heard about the multiple storied parking garages at Olympia and Blackpool, which each holds well over a thousand cars.

This toy garage is large enough to accommodate a considerable number of the smaller type of model cars which are so popular. Doors were fitted to the prototype, but these seemed more of a nuisance than anything, as no child likes opening and closing doors. The roof light is optional, it certainly does make the toy more interesting and some children love anything that lights up.

#### A Note on Painting

When all the pieces have been cut to size, they should be smoothed and given a coat of flat grey priming paint. The parts should then be temporarily fitted together to ensure that everything is correct, then dismantled and given a coat of colour ready for final assembling. The colours should be bright either in hard gloss paint or enamel. A recommended scheme is as follows:—inside walls and roof, cream; floors, bright green; outside walls and roof, post office red; the 2in. rails, cream; also the petrol pumps and the frontpiece; the lettering, red.

A second coat of colour should be

given to all the prominent faces after the toy has been assembled. This note on painting is given first in order to emphasize the necessity of getting the preliminary coats on before assembling.

#### The Garage Body

The two sides of the garage are made from plywood or compressed board tacked with panel pins to a frame of  $\frac{1}{2}$ in. square timber, such as is found edging teaboxes. A smear of glue between the faces will make the job more firm. In nailing the frames to-

gether, if the points of the nails are removed before driving in, splitting will be avoided.

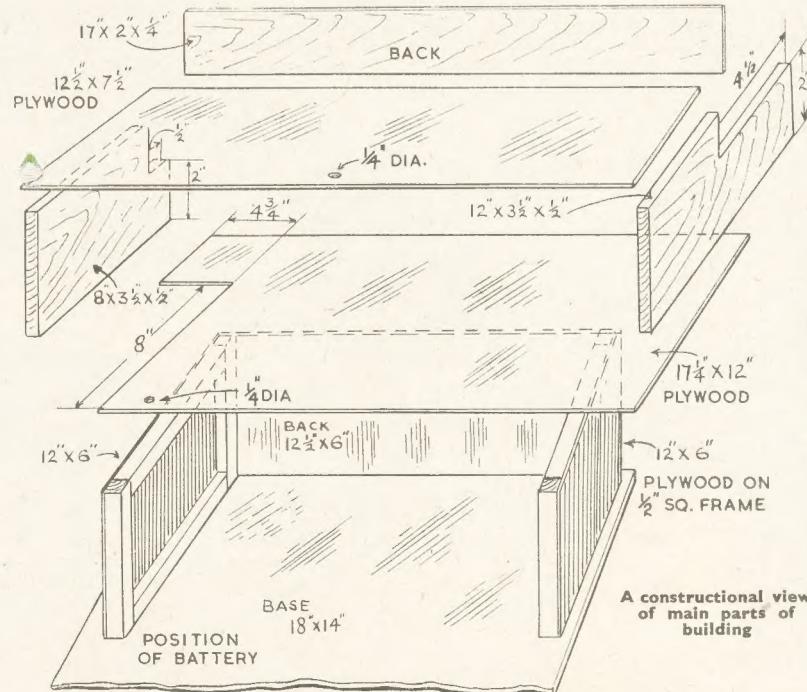
The back wall and the baseboard can be cut from plywood or compressed board and after the back has been fitted, the two frames (with the sides fitted) can be screwed to the baseboard from underneath, using two  $\frac{1}{2}$ in. screws in each side. Ensure that the sides are spaced perfectly square. Cut the first floor from plywood or board, this being 17ins. by 12ins., with a piece 8ins. by  $4\frac{1}{2}$ ins. Cut out for the ramp and a hole drilled in the front centre for the light wires. Cut the two first floor sides, 8ins. by  $3\frac{1}{2}$ ins. and 12ins. by  $3\frac{1}{2}$ ins. and screw these to the first floor. Fit the first floor and make secure with a smear of glue and panel pins.

#### The Roof

The roof is fitted next, this being secured with glue and panel pins. The roof should be complete with lamp tower, the latter being made from an old bobbin, to which two grooves have been filed in the top face to accommodate the wires. The tower is fixed with two screws. It is advisable to thread the light wires (twin flex) through the various holes before the roof is fixed. The frontpiece can now be fitted, thus completing the body of the garage.

#### Making the Ramp

Cut the ramp from a piece of plywood or board and chamfer the lower end to give a smooth run in for the cars. Nail in



position the centre strip of  $\frac{1}{4}$  in. square. This should be chamfered at each end. Cut the two ramp supports from any suitable timber, preferably  $\frac{1}{2}$  in. thick, and nail a strip across the top of each to take the ramp fixing screws.

Place the ramp and top support in position and mark on the side of the garage the position of the support. Drill two screw holes through the side of the garage and fix the support with screws driven in from inside.

### Rigid Fixing

To make more rigid, drive a screw through the baseboard into the bottom of the support. With the ramp in position, fit the other support in a similar manner. File the top end of the ramp to make a good fit up to the first floor, and temporarily fix in position.

Fit the sides of the ramp, after they have been sawn at each end to make them at right angles to the baseboard. Glue and fix in position, starting with the  $3\frac{3}{4}$  in. piece which fits at the top. It should be ensured that the 4 in. piece which fits up to the garage comes the same distance down the ramp as the other side. Fit the gateway next, trimming the ends of the pieces to bring the structure perfectly square and to fit snugly to the sides of the ramp. The ramp can now be finally fixed to its supports, using four  $\frac{1}{2}$  in. screws.

### Petrol Pumps and Light

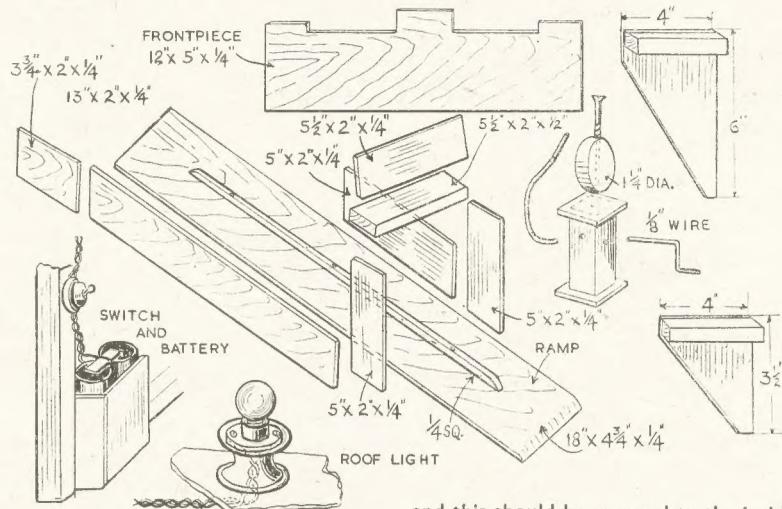
The pumps are made from 1 in. square soft wood, 3 in. long, with a  $1\frac{1}{2}$  in. square of plywood fixed to each end. A plain wooden wheel  $1\frac{1}{2}$  in. diameter and  $\frac{1}{4}$  in. thick is drilled right through the edge and screwed to the top, or a piece of  $1\frac{1}{2}$  in. square can be drilled across the diagonal and used in the same way. The

pump handles are made from  $\frac{1}{8}$  in. wire, bent as shown. The end which passes through the pump is bent over to prevent the handle coming out.

The petrol tube is made from valve rubber, each piece 4 ins. long. To the free end of each tube, is fitted a shoe lace tag, or anything similar will do. The tube is fixed by first drilling the pumps  $\frac{1}{8}$  in. deep, pushing in the tube, and

ascertained that the wires are long enough to reach the battery and the switch before fixing the holder. The compartment for the twin-cell cycle battery should be wide enough just to grip the battery. This spacing may call for a strip of wood to be fixed to the garage frame before the plywood pieces are fitted.

Any type of miniature switch will do



securing with a panel pin. The pumps are secured to the baseboard with a dab of glue and a screw inserted from underneath.

A bulb holder, suitable for an ordinary flashlamp bulb will be needed. Fit this to the top of the light tower after first pressing the two wires into the filed slots. Ensure that the terminals are adjacent to the wires. It should be

and this should be screwed to the inside of the garage frame after the wires have been connected. One wire should run from the light to the switch and the other from the light to the battery. A short piece of wire is then taken from the second terminal on the switch to the battery. The wires can be fastened to the battery with paper clips. The light is made more attractive by dipping the bulb in red cellulose enamel.

## BATTERY OPERATED INSPECTION LAMP

**T**HE value of a pen torch when examining small electrical equipment, instruments, etc., is well-known, especially if the equipment is fixed in boxes, cabinets or behind car panels. These torches, however, have two big drawbacks. The

switch has to be held in position, leaving only one hand free for work, and the life of the battery is short when the torch is used continuously.

Both these difficulties are eliminated by making a lamp as shown in the diagram, and connect-

ing it to a battery of sufficient capacity to meet requirements. The body of the lamp consists of a 4 in. length of light gauge copper tube of  $\frac{1}{8}$  in. diameter. Into this tube is forced a  $\frac{1}{2}$  in. diameter wireless lead-in tube, so the insulation is level with the end of the body tube at one end, and protrudes about  $\frac{1}{8}$  in. at the other end. A tight fit is essential.

### Contacts

The brass rod of the insulating tube is then removed, and the top end of tube drilled  $\frac{1}{8}$  in. to a depth of  $\frac{1}{2}$  in. to house the base of a screw-in type bulb. To lock the bulb in position select a small screw about  $\frac{1}{8}$  in. diameter by  $\frac{1}{8}$  in. long, and drill and tap the body to suit, as shown. This screw will form a contact between the bulb and the copper body.

The second contact is formed by the brass rod of the lead-in tube. Having removed one terminal, reduce the outside diameter of the back nut to just under  $\frac{1}{8}$  in., and push rod and nut down the insulating tube, so the back nut rests at the base of the  $\frac{1}{8}$  in. hole, to form contact with the base of the bulb.

A spot of solder on the nut will fix it

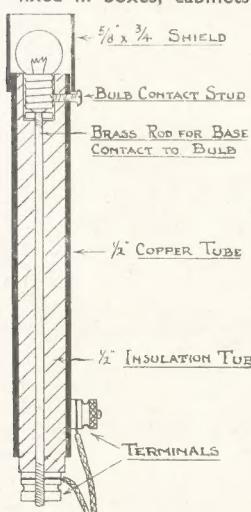
to the rod permanently. Run on the other back nut in order to clamp the rod to the insulating tube and refix terminal nut. It may be necessary to extend the thread on the brass rod, and then cut off the surplus.

At the bottom of the lamp fix a second terminal. This can best be done by drilling and tapping in the body of the lamp a hole, to take the screwed rod of a small terminal, such as used on some types of  $4\frac{1}{2}$ -volt bell batteries. Care must be taken that this terminal stud does not make contact with the brass centre rod. Screw on a back nut and solder in position, and finally run on terminal nut.

### Protector Shield

A push-on shield to protect the bulb can be made from a piece of light tube,  $\frac{1}{8}$  in. diameter and about  $\frac{3}{4}$  in. long. Or a piece of rubber tube can be used if preferred.

To use the lamp, a screw-in type bulb is fitted and the terminals connected to a suitable supply by a twin flex. A 4-volt flash lamp bulb and battery are quite satisfactory.



# Simple inexpensive to make is this dual-purpose USEFUL KITCHEN STOOL

**T**HE idea of this useful piece of kitchen furniture was brought about by necessity—"the mother of invention". Space in the kitchen, like a number of other things, was in short supply, and there was an urgent need for somewhere to keep the shoe-cleaning tackle. Also a stool was required, high enough for window cleaning, hanging out the clothes line and reaching top shelves.

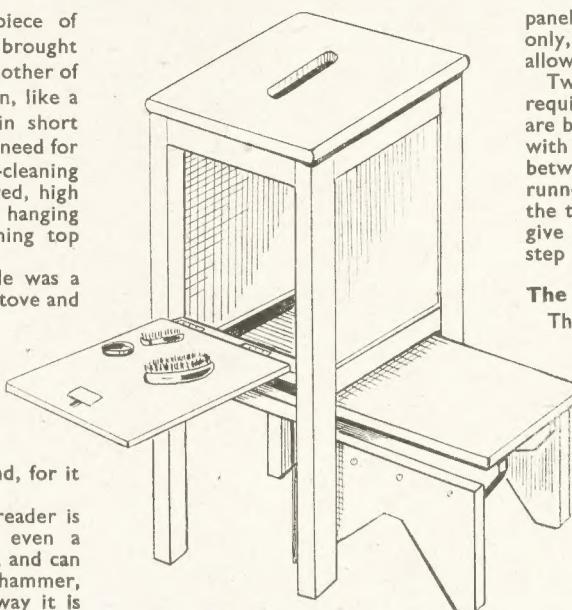
Now, the only space available was a small gap between the cooking stove and the boiling copper, about 12ins. wide. After a few evenings in the workshop, the stool-cum-shoeblack box shown in Figs. 1 and 2, was the result. The stool was made several years ago, and to lose it now would be like losing an old friend, for it is in demand every day.

It matters not whether the reader is a baker, engineer, clerk, or even a woman, if he or she has a mind, and can use a screwdriver, saw and hammer, this stool can be made. The way it is made will, of course, depend upon the skill of the maker and the materials and tools at hand.

It can be simply nailed together from scrap pieces of wood or it can be made into a beautiful piece of furniture. Whichever way it is made, it will prove, providing it is safe, a most useful item to have around.

## The Framework

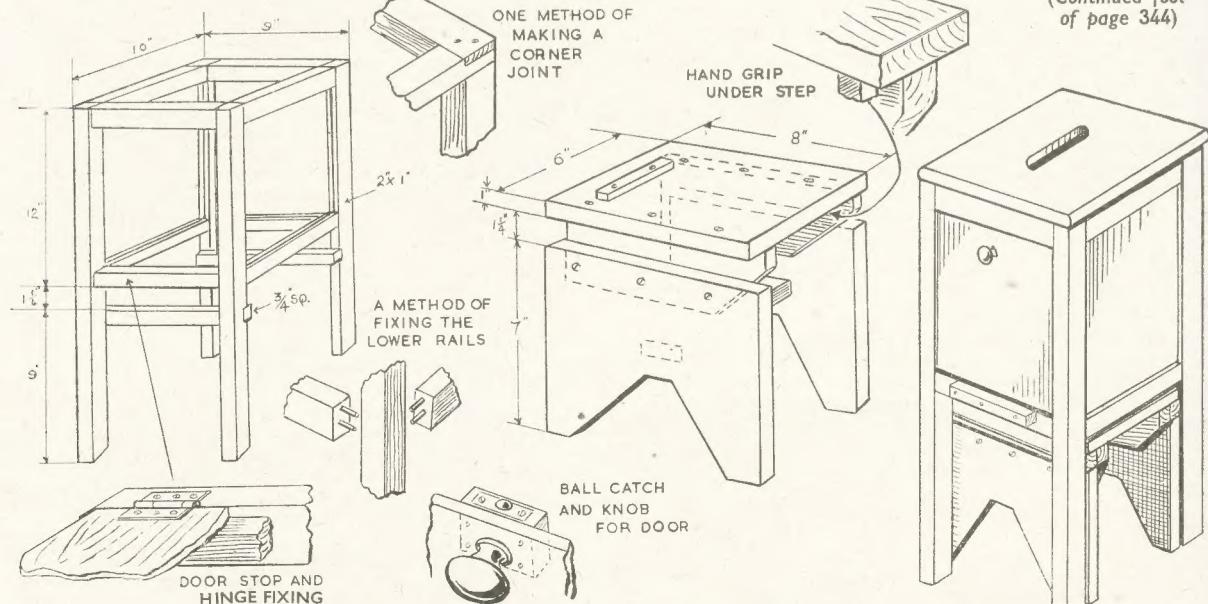
The material from which the framework is made, can be of any convenient size. The legs for the stool illustrated



were of 2ins. by 1in. and 21ins. long. The cross rails were 1½ins. by 1in., except for the two runners for the step, which were 1in. square. The method of making the joints is left to the reader. A mortice and tenon joint will make a good job, also will pegging and gluing, or the top rails can be lap jointed as shown.

Whichever way the rails are fixed, the two on the door side should be set back to allow for the door thickness. If the rails are to be rabbeted to take the side panels, they should be jointed to come flush with the outside of the legs. If the

top can be cut from a piece of 1in. or ¾in. board, 10½ins. by 9½ins. It should not overhang the side more than



panels are to be fixed with panel pins only, then the rails should be set in to allow for the thickness of the panels.

Two lengths of 1in. by 1in. will be required for the step runners. These are best let into the legs a ½in. and fixed with screws, as shown. The distance between the bottom rails and the runners should be about ½in. more than the thickness of the step top. This will give sufficient freedom for drawing the step in and out.

## The Panels and Door

The panels can be cut from any suitable material such as compressed board or plywood. If the frame has been rabbeted, the panels will have to be fitted as the frame is assembled. It is best to cut the panels individually to suit each side, this will allow for any variance in the measurements. The bottom can be cut ready to drop inside the frame, but it should not be put in position until after a step stop has been fitted as described later.

The door can be made of pressed board, plywood, or ¾in. planed wood. The hinges are fitted as shown, and any suitable kind of catch will do. A ball catch is shown in the sketch. An ordinary cabinet knob will serve to open and close the door. A piece of ¾in. square is screwed to the bottom rail below the door to allow it to lie flat when open and so form a platform for the shoe-cleaning tackle.

The top can be cut from a piece of 1in. or ¾in. board, 10½ins. by 9½ins. It should not overhang the side more than

(Continued foot  
of page 344)

# Some interesting and mysterious tricks simply produced by HOME CHEMISTRY

THOSE fascinating indoor fireworks called Pharaoh's Serpents are surprisingly easy to make. Or, rather, the serpents' eggs are! The materials needed are ferric chloride, mercuric nitrate, potassium thiocyanate, potassium nitrate (saltpetre) and a little gum arabic or other mucilage.

## Serpents' Eggs

First of all dissolve as much as possible of the mercuric nitrate in an egg-cup full of water. Then add one or two drops of your ferric chloride solution. Now make as strong a solution as possible of the potassium thiocyanate in water and add it drop by drop to your other solution until the latter turns red.

A grey precipitate of mercuric thiocyanate will have formed and this is the stuff the eggs are made of. Let it stand



Fig. 1—The magic finger

for half an hour. Filter it off, wash it on the paper with water and then let it dry. Do not try to dry it artificially or you may spoil it.

## Chemical Magic

All you have to do to make Pharaoh's Serpent eggs is to moisten the dry precipitate with a little water containing some saltpetre (to help them burn) and a little mucilage to hold everything together. Divide the dough-like mass into pieces and gently mould them into cones. Again, allow them to dry on their own and they are ready for the party!

Now, perhaps, one or two bits of chemical magic would come in well at

the party, too. What about the writing finger? For this trick you take a sheet of coarse-grained paper and divide it into three imaginary parts. Into the top part you rub a dry mixture of equal parts of tannic acid and ferric ammonium sulphate. The middle portion you treat in the same way but with sodium ferrocyanide and ammonium sulphate. Lastly, you rub the lower portion of the paper with a mixture of sodium salicylate and ferric ammonium sulphate.

Now, when you dip your finger in water you can write in black at the top, blue in the middle and red at the bottom. The water allows the pairs of chemicals to react and coloured compounds are produced.

## Beer and Water

Another useful trick needs a bottle with a screw-cap lid holding a cork, a few drops of tincture of iodine and some crystals of ordinary photographic 'hypo' (sodium thiosulphate).

Three-quarter fill the bottle with water and add some iodine, shaking until a nice pale brown colour is produced. Now cut a small hole in the centre of the

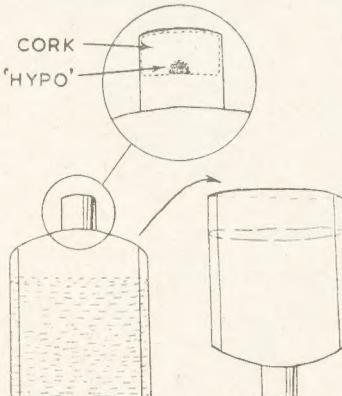


Fig. 2—Turning 'beer' into water

underside of the cork and press one or two crystals of 'hypo' into it. Carefully screw the cap on again.

When you invert the bottle and give it a shake the 'beer' will become water

## Kitchen Stool—(Continued from page 343)

1in., otherwise it will be unsafe to stand on. A hand slot 3ins. by  $\frac{3}{4}$ in. should be cut in the centre and nicely rounded on the sides for comfort. The top can then be screwed in position, and a piece of lino tacked on to improve the appearance, especially if the wood is of poor quality.

## The Step

The step is very useful when cleaning the windows or hanging out the clothes. It also makes the stool more steady in

use. The step is made of 1in. planed wood and the dimensions are given on the sketch. The step legs are supported in the middle with a cross piece of 2in. by 1in., either tenoned and glued, or just screwed in position. The top is supported on bearers which are screwed to the legs leaving a slot  $1\frac{1}{2}$ ins. wide to fit the runners.

A small strip of wood is screwed under the front of the step to form a hand grip. After the step has been slipped in position in the frame, a strip of

because iodine and 'hypo' react to give sodium iodide, which is colourless.

## A Mystic Change

Now by taking a little more trouble you can do a trick which is even more mystifying than those above. The audience see you bring in a glass of 'water' and you tell them you are going to turn it into ink. Then you suddenly clap your hands and the liquid becomes instantly dark blue. And you have not been near it!

To prepare for the trick, boil 2 grams of starch with about 100 ccs. of water and filter. Then make a solution of 0.2 gram (a pinch) of sodium sulphite in 50 ccs. of water containing 1 cc. of dilute sulphuric acid. Mix this solution with the starch and add enough water to make it 225 ccs. Label it A.

Now dissolve  $\frac{1}{2}$  gram of potassium iodate in a little warm water and then add more water until you have 225 ccs. Label this B.

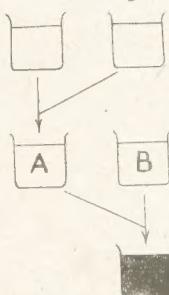


Fig. 3 — The sequence of mixing in performing the ink-and-water trick

## The Time Interval

Take small equal portions of A and B and mix them. Nothing happens at first and then suddenly the blue colour appears. What you have to do to make the trick effective is to time the change accurately, so that you know just how long to talk to the audience before clapping your hands. This timing must be repeated several times before you can be sure of the result. And always use roughly the same amount in your tests and when doing it before an audience.

What these latter people do not know is that in an acid solution sodium sulphite liberates iodine from any iodate, but only after a time lag. It is this iodine that acts on the starch causing a blue colour. The trick is one quite baffling unless you happen to know the simple answer.

wood should be screwed to the top of the step to prevent it being pulled right out or pushed too far in. When this strip has been fixed in the right position, the bottom of the shoeblack box can be placed in position and secured with panel pins.

All that remains is the finishing. After a good rub down with glasspaper, the stool should be given a coat of flat grey undercoat paint, followed by two coats of enamel in colours to match the surroundings.

# The student at home or school should make this SMALL WRITING DESK

**H**AS it ever occurred to you to make a table school desk for your boy? From the age of seven or eight, especially if he has homework to do, he needs a little desk in which he can keep exercise books, pencils, pens and other school sundries. It would not only please him, but would teach him the tidy habit of putting things away when he has finished work.

It would also be a useful addition to the home of the small business man, providing a place where a few letters, bills, etc., could be kept together handy. So far as size and interior arrangements are concerned it can be made to suit personal tastes and requirements.

Fig. 1 suggests what is in mind. Here you have a light desk measuring 18ins. by 13ins. and about 6ins. high. The writing front lifts up, disclosing a shallow well, whilst below is a useful drawer which can be partitioned if required. Alternatively, the drawer could be omitted, making the well correspondingly deeper. In any case provision could be made in the well for ink bottle, eraser, etc., by making a small box to fit into one corner.

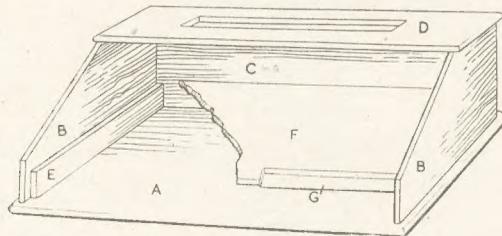


Fig. 2—Showing construction of the desk

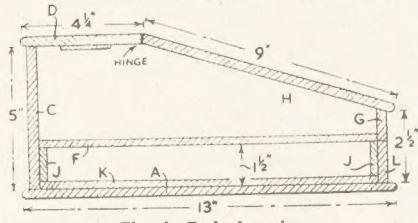


Fig. 4—End elevation

The measurements given can be modified to suit personal requirements, but for the purpose of explanatory details we will assume that they are being followed.

## General Construction

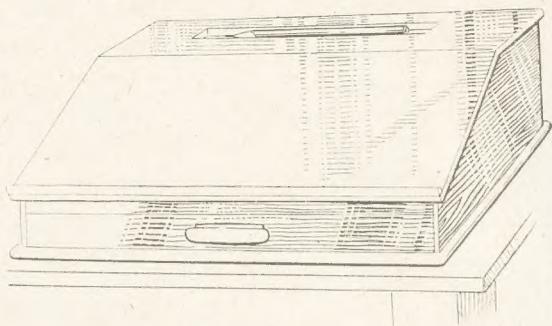
A glance at Fig. 2 will show that the desk is glued and nailed or screwed to the base (A) which measures 18ins. by 13ins. by  $\frac{3}{8}$ in. It is not essential to have this in one piece. It can be made up of two or more pieces butted and glued together. The sides when screwed in place will strengthen them sufficiently.

A detail of a side (B) is shown in Fig. 3. Two of these are required and they are cut from  $\frac{1}{2}$ in. wood. The back

(C) is glued between the sides and measures 16½ ins. by 5ins. by  $\frac{3}{8}$ in. Piece (D) will be 18ins. by 4½ins. by  $\frac{3}{8}$ in. The back and side edges will be rounded and the front edge chamfered to take the lid as shown in Fig. 4. A piece about 8ins. by 1in. can be cut from the centre to form a depression for the pencils and pens.

A backing piece of  $\frac{1}{2}$ in. or  $\frac{3}{8}$ in. wood must be glued underneath. Two side rails to take the floor of the well are next glued to the sides (B), in the position shown in Fig. 2. These rails (E) measure 11½ ins. by 1½ ins. by  $\frac{1}{4}$ in. The front rail (G) measures 16½ ins. by 1½ ins. by  $\frac{3}{8}$ in. and must be chamfered as shown in Fig. 4.

The floor of the well is of  $\frac{1}{4}$ in. material and can be of plywood or composition board or stout cardboard. It will measure 16½ ins. by 11½ ins. and can be dropped into place without fixing.



## The Drawer

The drawer is first made up as a shallow box of  $\frac{1}{2}$ in. material and to the measurements shown in Fig. 5. The short sides (I) are glued and pinned, with light fretpins, between the longer pieces (J). The floor (K) can be of plywood or composition board  $\frac{1}{4}$ in. thick. It will measure 16½ ins. by 11½ ins. It could also be constructed from two or three narrow boards to make up the total 11½ ins., so long as they are securely pinned to the sides.

It will be noticed that an extra piece (L) is fixed to the front of the drawer. It projects  $\frac{1}{2}$ in. at each end and thus measures 16½ ins. by 1½ ins. It will be seen by comparing the sketches in Fig. 1 and Fig. 2 that piece (L) comes up flush with the side rails (E) when the drawer is pushed home.

The drawer handle is a matter of personal choice. It can be of brass or wood bought ready made, or it can be shaped from an odd piece of  $\frac{3}{8}$ in. or 1in. wood. Remember that

if you intend to fashion the handle yourself it must be screwed to piece (L) before (L) is in turn glued and pinned to (J).

## Finishing

The type of finish depends largely upon the material used in construction. If the wood is all of the same variety it would look well if treated with brush polish and varnish. Fill the grain first with a good wood-filler and then apply two coats of brush polish.

Allow to dry for about half-an-hour and then glasspaper with a fine grade paper until the surface is quite smooth.

Two more coats of polish and a final light glasspapering will prepare it for the varnish which should be clear, not varnish stain. The brush polish will colour the wood slightly and will take the varnish well. Two coats will be

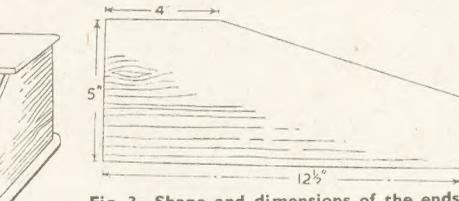


Fig. 3—Shape and dimensions of the ends

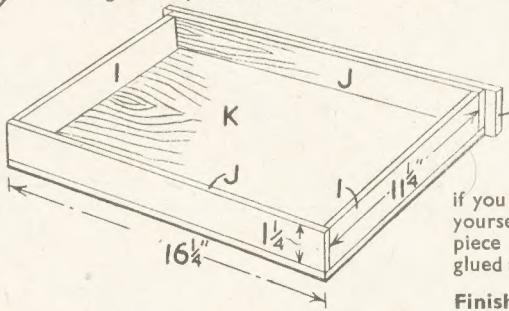


Fig. 5—How the drawer is made

## The Lid

The length of the lid (H) will be 18ins., the same as the top, piece (D). It will be of  $\frac{3}{8}$ in. stuff and will measure 9ins. wide. Here again it can be made from two pieces and held together by battens underneath. In any case two light battens will help to prevent warping.

The position of the hinge is shown in Fig. 4, and although outside flap hinges are easier to fix, it will look better if butt hinges are used. These should be recessed slightly into piece (D) and the lid to allow for the thickness of the hinge.

(Continued foot of page 346)

# Safety first is a sound maxim when dealing with ELECTRICAL CIRCUITS

**T**HAT cannot be too strongly emphasised that electricity is dangerous unless properly used. Yet many homes have extra lights plugged into existing points, the wireless working from a light socket with flex trailing clothes line fashion, or electric kettles and irons connected to unearthing circuits.

These things can cause fires or shocks which may prove fatal. The correcting of such faults, installing plugs and sockets in a professional manner and the earthing of domestic utensils are all within the scope of the handyman.

The essential things, so far as elec-

tricity is concerned, are safety precautions, careful work and a grasp of what constitutes an electrical circuit. If these things are learned and practised there will never be need of an electrician in the house and electricity will, indeed, be your servant.

It is one of the world's queer facts that no one has quite defined electricity. A few reasonable theories have been advanced, but all that has been established is that it is energy of some kind. Yet science has so harnessed it that it is almost an indispensable part of our daily lives.

Electricity can be likened to water in a pipe except that it flows through wire. To be useful it must flow through some form of resistance which can be a light bulb, a heater or a motor. It always flows from positive to negative and as it flows it gives off a heat pro-

portionate to the resistance in the wires. As the flow of water in one pipe will speed up if forced through a thinner pipe, so with electricity. The cable carrying current from the mains is comparatively thick and offers little resistance; the heat generated is tiny. But when the same current is pushed through the filament of a bulb, wire no thicker than a human hair, the heat generated is high. Sufficient, in fact, to cause the filament to glow with a white heat and so give light. The thicker wire in electric fires offers less resistance, length for length, and only glows red hot.

## Short Circuits

If for some reason or other, a resistance is not connected in circuit, that is between positive and negative, there will be what is known as a short circuit. The electricity will flow so fast along its wire, with no resistance to slow it down, that the wire will become hot and burn. The consequences might be fire, but a safety precaution in the shape of a fuse is fitted.

This is usually of tin wire with a low melting point, designed to carry about half the load of the other cables. As the unchecked current rushes around, these fuse wires become hot and melt, causing a break in the circuit. Actually this happens in a fraction of a second and all we see is a flash in the fuse box.

Electricity will flow through the human body and if a connection between positive and negative is made, say, by holding two wires or pushing a finger into a live lamp-holder, a circuit is made and a shock will be felt. Such shocks vary according to the size of the resistance in circuit. The greater the resistance the more current being used and the bigger the shock.

Another feature of electricity is that it is always eager to escape down to earth. If it can do

this through your body the resulting shock will be a heavy one. This can happen when handling fittings and standing on a stone floor.

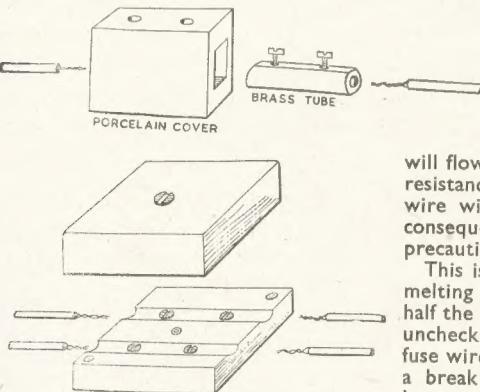
The golden rule, therefore, when handling circuits is to switch off before touching anything. And this means switching off at the main switch, usually by the meters. The circuit diagram will show that only the mains switch will break both positive and negative lines. All other switches break the positive line only and one point of each switch and one point of each lamp-holder is alive even when switched off, unless the mains are off.

Just in case the main switch is overlooked, always stand on a wooden board if the floor is of stone. Never climb on the sink or bath even to fit a bulb. When standing on a ladder or chair do not support yourself with one hand on the wall. These precautions break the body contact with the earth and prevent shocks.

Joints in electric cable should be avoided whenever possible, for an inefficient joint may pull apart and cause fire. For, as the cable parts under strain, the current will jump across the gap like a miniature flash of lightning. If a join is the only way out, the cables should be connected with junction boxes.

Insulation should not be cut away too far when making connections. It should be intact right up to the terminal screw and all the strands of multi-cored flex must be firmly twisted together. Loose ends cause shocks and short circuits.

Tighten all screws, for loose joints may



Two typical junction box assemblies

tricity is concerned, are safety precautions, careful work and a grasp of what constitutes an electrical circuit. If these things are learned and practised there will never be need of an electrician in the house and electricity will, indeed, be your servant.

It is one of the world's queer facts that no one has quite defined electricity. A few reasonable theories have been advanced, but all that has been established is that it is energy of some kind. Yet science has so harnessed it that it is almost an indispensable part of our daily lives.

Electricity can be likened to water in a pipe except that it flows through wire. To be useful it must flow through some form of resistance which can be a light bulb, a heater or a motor. It always flows from positive to negative and as it flows it gives off a heat pro-

## Writing Desk—(Continued from page 345)

sufficient, except, perhaps, where the end grain shows.

It would be advisable to give several light coats to all portions of end grain before applying the final coat to the whole. If a well wearing finish is to be obtained you must allow plenty of time for drying thoroughly between coats.

It is not absolutely necessary to varnish the interior, but if the desk is for a schoolboy, it would be advisable because

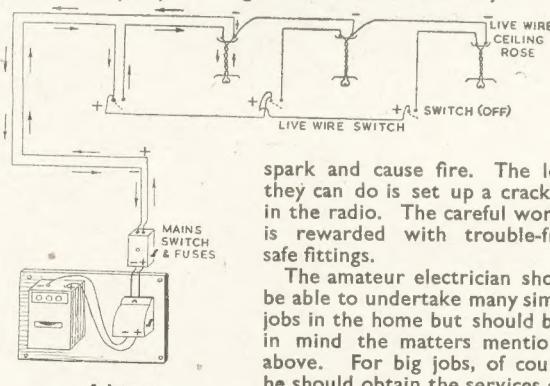
it would keep much cleaner. Plain unvarnished wood will show grubby finger marks very easily. Be careful not to put any varnish where it will interfere with the smooth working of the drawer.

## Using Paint

If odd wood of different varieties has been used it will be necessary to resort to painting or enamelling. A fairly light

brown or a pale green will do admirably. Here again it requires a good deal of patience in rubbing down with fine glasspaper before a really good finish can be obtained.

Finally, obtain a piece of green baize or similar soft material and glue this under the whole base, or small squares could be glued on at the corners. The desk can thus be used on a polished table without fear of scratching.



A house lighting circuit

# Cutting and colouring wood for decoration is known as INTARSIA WORK

INTARSIA work is a method of decorating woodware, and consists of cutting a suitable design on the face of the work, and colouring the parts of the design separately to resemble marquetry or inlay. It is extremely simple to do, effective to a remarkable degree and costs very little for materials and equipment.

Intarsia decoration can be successfully applied to any kind of wood, but the best results are obtained when the work is carried out on fine-grained woods. Three-ply is very suitable. The only tool required is a cutting tool. A stencil knife is ideal, or a simple knife can be made by fitting the small blade of a broken penknife into a wood handle. The point of the knife should be razor-sharp.

## Colouring Agents

Wood stains are suitable for colouring the design, but their colour range is somewhat limited. Leather dyes and stains can be used for this work and offer a wider range of colour selection. The only other things required are some glasspaper, carbon paper and suitable designs.

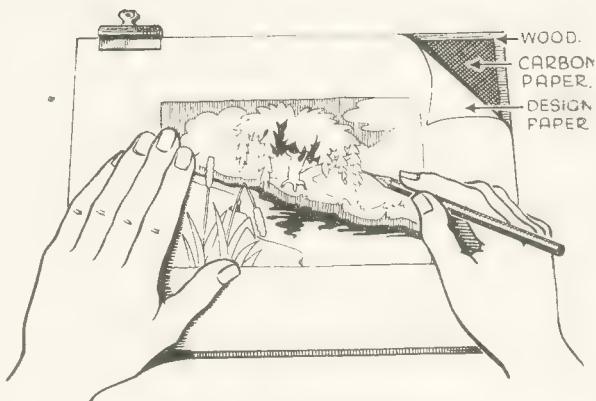
Practically any design with moderately large sections is suitable for intarsia work; intricate designs with very small pattern sections are not entirely suitable. Names, monograms, initials and conventional designs are suitable, as also

are simple pictures such as landscapes. The beginner is advised to select very simple designs for first attempts at intarsia work, and to practise on odd scraps of wood to acquire skill and gain confidence.

## Preparation

The first step is to prepare the wood by rubbing it smooth with suitable grades of glasspaper. The position of the decoration should be lightly pencilled on the wood. In the case of a central decoration (say, on the top of a box lid), it will be found helpful to draw diagonal lines from corner to corner to find the centre.

The design itself should be drawn or traced on paper, and when correctly positioned on the work, the work can be held in place with bulldog paper clips, as illustrated in the drawing. A sheet of carbon paper should be slipped under the design paper with the coated side of the carbon paper face down on the work. A well-sharpened pencil should be used to transfer the design to the wood. Examine the work before removing the



Illustrating how the design is transferred to the wood

design paper to ensure that every part of the design has been transferred.

## Cutting into the Wood

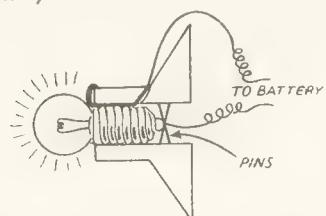
When transferring has been completed, the lines of the design can be cut into the wood with the knife. Use the knife as you would a pencil and keep the blade vertical. Cut the lines an even depth so far as that is possible and hold the knife firmly. Do not allow the point of the knife to wander with the grain. Provide firm wrist support to prevent the knife slipping. If the design is detailed it will be found best to commence in the centre and work outwards.

After cutting the lines, cleanly and evenly, the work should again be rubbed smooth with glasspaper. After cleaning the work, blow the dust away and clean the dust out of the cuts with a fine brush. The decoration is now ready for colouring.

The colouring agent (wood or leather dyes or stains) should be applied with a soft brush; care must be taken not to allow the colour of one section to run into the next section. Use the colouring agent sparingly, commencing from the centre of the decoration and working outwards. A few drops of ammonia in the stain or dye will be found very effective in preventing colours running into each other. Use your own judgment about colours; if you are colouring a landscape use natural colours for trees, grass and bushes, etc.

## Bulb Holders

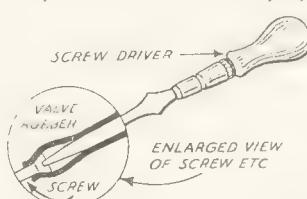
SOMETIMES a small bulb holder will not lend itself to paint, so why not make your own? Cut a cotton reel in



half and enlarge the hole. Drive in two  $\frac{1}{8}$  in. panel pins crosswise and fix a wire to them. Pass another wire through the side of the reel and up the centre, as in the diagram. Fasten this in the top and take care that the wires do not touch. You can then test, and paint the required colour.

## Fixing Small Screws

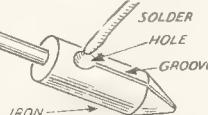
WHEN fixing a small fretwork screw in an awkward position, where it is not possible to hold it with the fingers while it is being screwed, the following method may be used. Take



Insert the screw in this so the edge of the screwdriver fits in the screw. You will find this will hold the screw while it is being inserted.

## Soldering Tip

THIS tip will prove useful when you find difficulty in making solder run into a seam. Drill a shallow hole in the middle of the iron, and with the edge of a file form a V groove to the tip of the iron. Put the solder in the hole of the hot iron, and it will run down the groove into the seam.



## Polished Finish

The decoration should be polished to finish. A good wax polish is suitable and the first application should be very generous to fill the cuts. After polishing it will be found very difficult to distinguish between the intarsia work and expert inlay, the only betraying factor being the grain direction. If a very fine-grained wood is used your work will have the appearance of work of greater value in relation to the time expenditure and material cost.

# Another suggestion for making a cylindrical form of REVOLVING LAMP

**T**HIS is an item for people who like novelties—a lamp with a shade that revolves slowly. The shade encloses the bulb, cylinder fashion, and bears some interesting scene.

They are quite simple to make, but a certain care must be observed in balancing the parts, as the whole shade revolves on a pin-point bearing set on the top of the bulb. As hot air rising from the bulb is the only driving agent, the more accurate the balance, the better the action will be.

First make the bulb holder and base (Fig. 1). The base is a circular or rectangular piece of wood about 6ins. across and  $\frac{1}{2}$ in. to 1in. deep. A hole is bored in the centre, also a channel from this to one side, both to take the flex from a batten lamp-holder which is

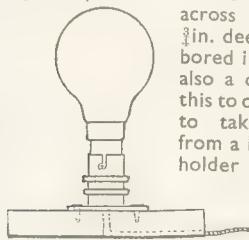


Fig. 1—The base and lamp holder

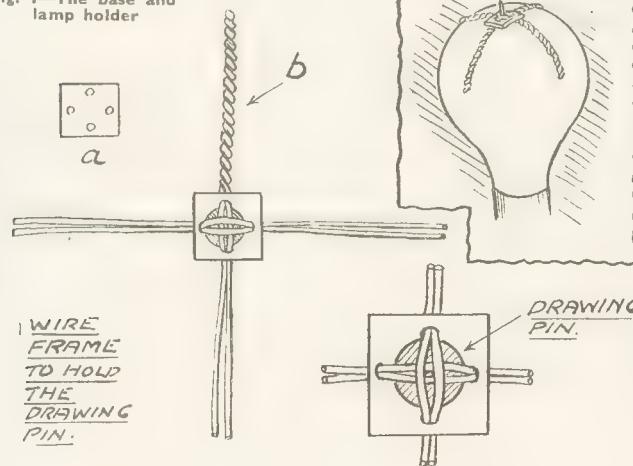


Fig. 2—The framework with the drawing pin top

screwed into position over the centre hole.

Now comes the revolving shade and bearing. The latter is made with four pieces of wire, a small square of tin and a large-sized brass drawing pin. The tin is cut to about  $\frac{3}{4}$ in. sides and four holes bored as (a) Fig. 2. These are best made by putting a nail at the desired point and tapping gently; the slight bulge which appears on the further side then being filed away. This leaves good, flat-edged holes. Now thread lengths of wire through as shown, twisting the pairs on all four sides as (b).

The twisted wire must extend down over the bulb (see inset) for about 1 $\frac{1}{2}$ ins., which means that the original length will have to be about 4ins. There

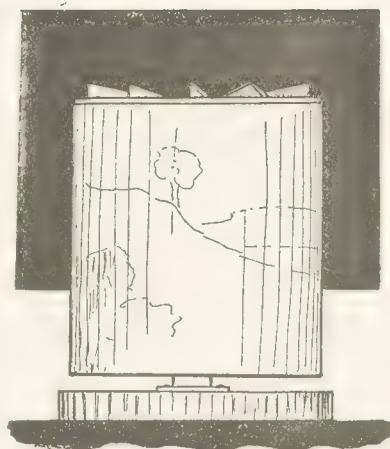
is, however, no absolute rule, as long as the frame firmly caps the bulb. Quite soft wire will do, as it gains strength by the twisting. Before putting in the last two wires, insert the drawing pin which should be one of those large headed type.

If correctly made, the wires when curved down will hold the tin square with its drawing pin pivot sufficiently firmly on the centre top of the glass. The inset sketch shows the frame in position.

## Parchment Cylinder

The shade is built up of the top disc (A) Fig. 3 and the parchment cylinder (B). The disc is a piece of light, easily-cut tin of 6ins. diameter. With a compass scribe out the circles (1), (2) and (3). Cut at intervals between (1) and (2) all round as shown, thus forming tabs which finally can be bent down with a pair of flat-nosed pliers. Drill the holes (D) on opposite side tabs for attaching the parchment.

Between the circles (3) and (4) draw in diameters at right angles and then put in two more diameters bisecting them. This gives eight radii in all. Along each radius mark a triangle as (E). Then by scoring heavily with something pointed and filing on the other side,



drawn, make a small indentation on what will be the underside, again by a tap on a nail, this being to fit over the point of the upturned drawing pin.

The shade itself is a rectangle of parchment of sufficient length to go round the tabs of the disc, which have now been bent down, and of sufficient depth to cover the bulb but ride above the base. For a 6in. disc this will mean 19ins. long leaving a little overlap, and about 6ins. deep.

On the parchment paint some simple continuous scene, using transparent colours, that is, colours that retain their tint when light shines through them. Ordinary colours just look black; transparent colours, however, are sold as such.

Place the shade thus completed on over the bulb, with the pin-point bearing fitting in the centre indentation, switch on, and as everything heats up the shade will start to revolve, the turning continuing as long as the lamp burns.

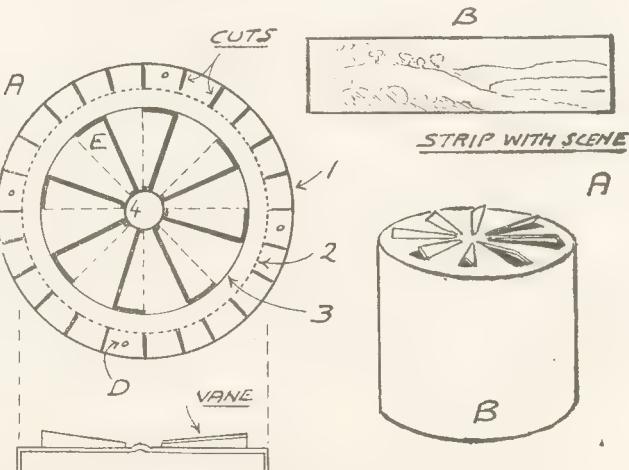
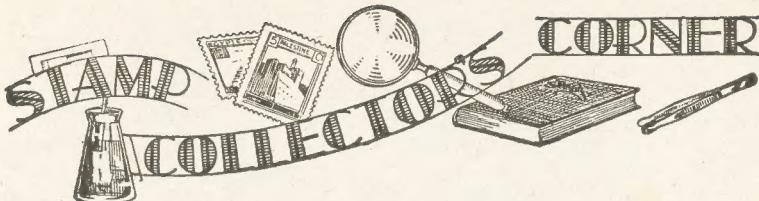


Fig. 3—The rotor, the cylinder and a suggested painted scene



**R**EADERS will, no doubt, recall that some time ago Hobbies Weekly spoke about the issue of new Canadian Stamps. Then, just before these were due to be issued, news came through that the stamps which had been prepared were not going to be issued after all and we have had to wait some considerable time for the new ones to arrive.

#### In Civilians

The illustration this week shows you all five new values and, as you see, the new portraits show His Majesty in civilian clothes instead of—what? How many of you could sit down now and without looking at your album write down the uniform that His Majesty is wearing on the 1c., 2c., 3c., 4c., and 5c. stamps?

As there are two three cents stamps, the colours being different, although the designs are the same, it means that His Majesty appears twice in Naval, twice in Military and twice in Air Force uniform. It is quite easy to remember on which value he appears as a member of each Force. The order is Naval, Military, Air Force for the 1c., 2c., 3c., then Air Force, Military and Naval for the 3c., 4c., and 5c.

#### 'First Day' Cover

As you see the stamps have been stuck on one cover which was posted on the day of issue. In England up to now we have not had these special envelopes for first day celebrations. If we have wanted to send a 'First Day' cover, then we have had to stick the stamps on to any envelope and label it ourselves as a first day cover and then trust that the Post Office clerk will postmark the envelope so that the date is easily visible. Now, however, a London Firm has introduced a printed envelope for the special purpose. Canadian firms have been doing this for some considerable time.

#### From the Cook Islands

Another nice new set that has just been issued is one that comes from the Cook Islands in the Pacific Ocean. By the way—what a splendid thing it would be for philately if everyone would take out an atlas and look up those places the whereabouts of which are somewhat hazy to them.

There are ten stamps in this new set, all of which are of large size—the same as the Universal Postal Union stamps now issued by this country. The seven low values are horizontal views, the three shilling values are vertical stamps.

At the risk of another aside—do you realise why this question of the size and shape of a stamp is given? Well the

reason is so you will be able to arrange a collection more easily. If you obtain one of these stamps then you need to know what the other values are like so that when you place it in the album it will not look silly. Neither will you have to take out the first specimen in order to arrange the second.

#### Picturesque

The halfpenny stamp shows a picture of Ngatangiia Channel, Rarotonga—a pretty scene of water backed by mountains and flanked by palm trees. This Ngatangiia Channel was the departure point of the Maoris for New Zealand in 1350 A.D. Captain James Cook appears on the left of the one penny stamp with a map of the Hervey Islands in the centre. These were the first of the islands discovered by Capt. Cook in 1773.

The twopenny value shows another portrait, but this time it is that of the Rev. John Williams who was the first missionary in Rarotonga in 1823. In the centre again is a map of Rarotonga and on the left a sailing vessel 'The Messenger of Peace'. The threepenny stamp has a large map of Aitutaki superimposed on what is a view of the island.

There is no four-penny value, but the fivepenny gives us something rather new for designs of such small islands. It shows a view of a plane landing on the aerodrome at Rarotonga. The sixpenny shows us a view of Tongareva or Penrhyn Island; the eightpenny a banana plantation with a large tree bearing a beautiful bunch of this fruit. Notice the size of these leaves.

Now we come to the three higher values. The one shilling has a large figure of Capt. Cook overlooking a map of the part of the Pacific ocean in which we find the Cook Islands. More palm trees and a hut on the two shilling and the three shilling compares a native outrigger canoe with a large ocean going vessel.

#### Price Panels

One rather clever point in connection with this set is the way in which the value tablets have been drawn. In each case some part of the design contains the value. For instance, the ½d. comes in an angle formed by the frame of the stamp and a primitive club. The 1d., 3d., and 8d. are all drawn in the inside of a fruit,

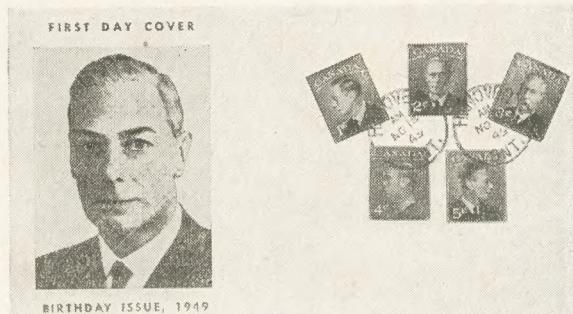
## INTERESTING NEW ISSUES

a shell houses the figure 6 and native paddles the 5d. The 1/- has the most ingenious frame in the opinion of the writer. It is a bollard to which is attached the rope that forms the frame of the stamp.

#### Maps

Map stamps are very fascinating to most collectors and Egypt issued a stamp last August showing a map of the Egyptian Empire under Mohammed Ali. It was a large stamp of low postage value so it should not be dear to buy. It shows a small portrait and a large map of Egypt, the clearest this country has had. Others have simply been parts of the Nile and so on.

Most readers will by now have seen the three South African stamps issued in connection with the monument placed outside Pretoria in memory of the Voortrekkers, or at least seen one of



Five new values from Canada on a First Day Cover

them. The 1d. shows a picture of the Voortrekkers on their way to Natal. The storm clouds and the lightning in the distance give an indication of the hardships they had to experience and the woman and the lamb typifies the patience they had to show to overcome these hardships.

#### Memorial

The 1½d. shows a picture of the Memorial and in this design we note the native shields and powder horns showing the settlement was not too peaceful. The 3d. has three parts in the design. The centre has a candle burning on an open bible. On one side a woman and child and a sheep and a lamb, and on the other side a man and his dog all looking towards the centre.

In addition to all those described there are, of course, the stamps which have been issued by so many countries in commemoration of the 75th anniversary of the Universal Postal Union. So that you have a very full packet if you can get hold of all the new issues of the last month even.

# MISCELLANEOUS ADVERTISEMENTS

**P**HOTOGRAPHIC enlargements. For specimen postcard and price list, send negative and 2½d.—Boucher, 228 Croydon Road, Beddington, Croydon.

**F**REE Bahawalpurs', Colonial discount approvals. Postage.—Bishop, 40 Marine Parade, Hythe, Kent.

**S**TAMPS free—Queen Victoria packet, including old Colonials free to approval applicants.—Robert J. Peck, 7A Kemp Road, Bournemouth, Hants.

**I**NTRODUCTIONS. Pen friends, companionship or marriage.—V.C.C., 34 Honeywell Road, London, S.W.11.

**H**OMEWORKERS wanted, light assembly work. Good pay, S.A.E.—Esprey, 29 Newmans Grove, Rugeley, Staffs.

**S**TAMPS—free gift, discount approvals, write—Ridley, 50 Fellside, Cleaton, South Shields.

**L**EAD toy casting—a new book with 126 illustrations, 2/6 posted with catalogue of moulds. Sample mould, 4/6.—G. F. Rhead, Thurston End, Hawkdon, Bury St. Edmunds.

**P**ROFIT and pleasure for model makers, making ships in bottles. Complete plans and instructions, 2/6.—Phillips, Littlecraft, Kingswear, S. Devon.

**S**TAMP album, illustrated, 100 different stamps, mounts, 3/-—Whitby, Godshill, Fordingbridge, Hants.

**35** m.m. cinematograph films, cowboy, comedies, drama, interest, etc. 100ft., 4/6; 200ft., 7/6; 500ft., 15/9.—Jones, 51 Cranford Drive, Hayes, Middlesex.

**B**E Taller. Quickly! Safely! Privately! No appliances—no tablets—no dieting. Details, 6d. stamp.—Malcolm Ross, Height Specialist, BCM/HYTE, London, W.C.1.

**M**ODELS. You can make lasting stone-hard models with Sankey's Pyrama Plastic Cement. Supplied in tins by Ironmongers, Hardware men and Builders' Merchants. Ask for instruction leaflet.

**T**RANSFERS for decorating toys, trays, furniture, fancy goods. List and samples free. Flowers, pixies, dogs, nursery rhymes.—H. Axon Harrison, Jersey.

**L**EARN Shorthand by April 1st (1 hour's study nightly). 1st lesson, 2½d. stamp.—Duttons (Dept. HB), 92 Gt. Russell St., London, W.C.1.

**R**UBBER tyred metal disc wheels finished in red, green or blue enamel. 2ins.—2/6, 3ins.—3/- per set of four. Post paid. Other sizes available up to 9ins.—The Joyden Toy Co., 193 Chase Side, London, N.14.

**Y**OUR Winter hobby. Build a fleet of Wilson's Lorries. Photographically illustrated lists, 6d.—Wilson's Lorries, Dept. H, 1 Gt. Winchester Street, London, E.C.2.

**D**OLL'S House fittings and papers; send S.A.E. for list. Doll's house plan special; send 2/6. Trade supplied.—Zimplan, 88 Ware Road, Hoddesdon.

**L**ONELY? Then write Secretary U.C.C., 5B.B. Hay St., Braughing, Herts. Genuine. Est. 1905.

**C**ONJURING and Magical tricks, lists 3d.—De Hempsey, 363 Sandycombe, Kew Gardens, Surrey.

**P**LYWOOD, new, 27×19× $\frac{3}{16}$  in., 7 for 20/-; 27×16× $\frac{3}{16}$  in., 9 for 21/8; 20×20× $\frac{3}{16}$  in., 9 for 20/- Veneered Oak, Mahogany Plain, Sepele, 7 for 29/9; Walnut, 7 for 32/6; Quartered Walnut, perfect panels, 7 for 60/-. All the above are well selected panels and will please. B.C. Pine Pieces (Ply), 17×7× $\frac{1}{4}$  in., new, 24 for 16/-; Parana Pine Pieces (Ply), 17×6 $\frac{1}{2}$ × $\frac{1}{4}$  in., 48 for 20/-, all post paid. C.O.D. Immediate delivery. You pay the Postman, 24 hour service. Pine lids, 39×17× $\frac{1}{4}$  ins., 3 for 24/-. Box sides, well seasoned timber, 18×16× $\frac{1}{4}$  in. Oak, 8 for 20/- Birch, 9 for 20/- Mixed Hardwoods, 10 for 20/-. Teak,  $\frac{1}{4}$  in. thick, 5 for 20/-. Teak, 18×4 $\frac{1}{2}$ × $\frac{1}{4}$  in., 40 for 20/-. Sacks of offcuts, 2/3in. wide by 6/8in. long, all thicknesses, approximately 28lbs., 10/-. All the above have one clean sanded face, are carriage forward for C.W.O. Large list of offcuts, plywood and veneered panels, 2d. post free.—Dept. H., JDD Storage, 71 Northcross Road, S.E.22.

**P**ERSONS required make fancy goods at home. Write for details.—Melton Manufacturing Co., Southgate Street, Leicester.

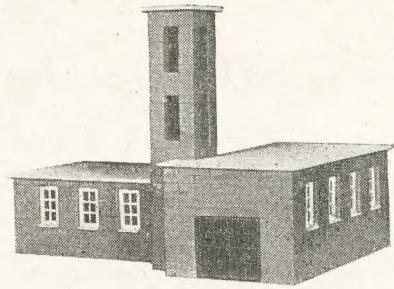
**E**NGRAVING on Perspex; send drawing and S.A.E. for quotation.—Geo. Cleaver, 50 Windsor Road, London, N.W.2.

**C**YCLISTS—"Cyclop" stop-thief Pump Clips, with double-roll locking action, positively prevents theft. Nickel, 1/3. Chromium, 2/-. Korving Ltd., 12 Duke Street, London, S.W.1.

**W**HEELS for toys, and other accessories. Full lists will be sent on application to The Joyden Toy Co., 193 Chase Side, London, N.14.

**100,000** Government surplus bargains. Warning lights, red, suit models, cycle rear lights, etc., 6d., P. 3d.; 16-bank switches, comprising 16 separate snap-action switches in one panel, 7/11, P. 9d.; aluminium rivets, approximately 1lb. assorted, 2/6, P. 6d.; sponge rubber strip, approximately 18ft.×1 $\frac{1}{2}$ ins.× $\frac{1}{8}$ in., 2/-, P. 6d. Send 3d. stamp and S.A.E. for list of these and other bargains for the hobbyist.—Milligan's, 24 Harford Street, Liverpool, 3.

**B**LUSHING, shyness, nerves, self-consciousness, fears, ended. Details under plain cover, 1d.—Stebbing Treatment, 28 (HB) Dean Road, London, N.W.2.



**YOU can build  
this  
FIRE STATION**

WITH



**BRICK & MORTAR  
BUILDING KIT**

The Brickplayer Kit enables you to build this and many other models, such as Garages, Railway Stations, Signal Boxes, etc., or you can build from your own imagination. All railway models will fit "O" gauge scale. Buildings can be permanent, or dismantled by merely soaking in water and the bricks used again and again.

Brickplayer Kits, approximately 23/10d. and 44/-, and extra accessories are available from good hobby shops, toyshops and departmental stores

If your dealer cannot supply, write for address of nearest stockist to

**J. W. SPEAR & SONS LTD.  
Dept. "H", ENFIELD, MIDDLESEX**

**H**OME Movies, 9·5 film library, projectors, films, in great variety. Sale cheap. Stamp lists.—Wayland, 223 Longley Road, Tooting, S.W.17.

**F**URNISH that Doll's House with the latest model furniture, glassware, food and accessories. List 8d.—Sutton Models, Billericay.

**F**ASCINATING and profitable hobby, casting ornaments, toys, etc. You can easily make these yourself. Paints, brushes and all accessories. Illustrated catalogue of 700 moulds, plus latest list of rubber moulds, with instructions, 9d. post free.—Cock of North Moulds (H), 140 Hollings Road, Bradford.

# RAWLPLUG PRODUCTS

INDISPENSABLE  
IN THE WORKSHOP  
HANDY IN THE HOME



The Rawlplug Popular Outfit costs only 2/6 complete. Larger sizes are obtainable.

Rawlplug Devices include Rawlbolts for heavy duty fixings, Rawlanchors and Toggle Bolts for thin or hollow materials and Rawlclips for instant fixing of conduits and cables to girders—a device in fact for every need.

Rawlplug fixing devices and products can be obtained from Ironmongers, Hardware Dealers, Stores or Model Makers Suppliers.



## SCRAPER

finish without chatter or scratching. Easy-grip handle made solid with blade carrier in seasoned hardwood, polished and varnished. Total length approx. 6". Fitted renewable 2½" Cadmium Plated Steel Blade, with cutting edge ground like a razor. 3/- each.

## RAWLPLUG

### FIXING DEVICES AND TOOLS

Whatever your fixing problems, there's a Rawlplug Device that will solve it for you—easily and quickly. Rawlplugs make neat and absolutely firm fixings in any material from brick or tile to stone or slate, with a size for every screw from No. 3 up to 1" coach screws. Rawlplug Tools are easy to use and ensure a perfect hole without damage to surrounding surfaces. Other

Rawlplug Devices include Rawlbolts for heavy duty fixings, Rawlanchors and Toggle Bolts for thin or hollow materials and Rawlclips for instant fixing of conduits and cables to girders—a device in fact for every need.

Rawlplug fixing devices and products can be obtained from Ironmongers, Hardware Dealers, Stores or Model Makers Suppliers.



## DUROFIX

The indispensable adhesive for instant use on crockery, glass, wood, metal, celluloid and the hobbies enthusiast. Instant drying, insulating, waterproof and heatproof. Durofix is grand for repairs to electrical, sports and leather goods. Tubes 9d. and 1/3d. Tins 2/9d. and 7/6d.



## DUROGLUE

### UNDILUTED ANIMAL GLUE OF INCOMPARABLE STRENGTH

Ready for instant use for the many purposes for which an extra strong glue is needed. Wood, cloth, fabric, felt, leather and any greaseless surface can be stuck with Duroglue. Tubes 6d. and 1/-. Tins 2/3d. and 3/9d.



## PLASTIC WOOD

### APPLIED LIKE PUTTY, DRIES LIKE WOOD

Can be cut, planed, polished & painted like wood. Will take nails and screws like wood. It does not blister, crack or decay. Rawlplug Plastic Wood is actually the best quality product of its kind on the market. Tubes 9d. Tins 2/- and 5/-.



## TILE CEMENT

### Rawlplug Tile Cement is a liquid cement possessing

very strong adhesive qualities. For replacing tiles to walls, floors, fireplaces, hearths, curbs, etc., in kitchens, lavatories, bathrooms, halls, bedrooms, reception rooms, etc. 2/3d. per tin.

**THE RAWLPLUG COMPANY LTD. LONDON. S.W.7.**

## ALL ABOUT FRETTWORK

by W. F. Chambers  
(Editor of Hobbies Weekly)

The book for all fretwork enthusiasts

Bound in paper covers, 2/6 net.

Or there is a cloth bound edition at 5/- net.

Obtainable from all booksellers, branches of Hobbies, or from the publishers :

**VAWSER & WILES (London) LTD.**  
356/358 KILBURN HIGH ROAD, LONDON, N.W.6

### Miscellaneous Advertisements—Continued

**H**OME watch and clock repair outfit. Includes watchmaker's eyeglass, tweezers, screwdrivers, oilers, brush, oil, plus explanatory booklet fully illustrated. In container. Skill unnecessary. Invaluable for all fine work, 12/9 inclusive.—D. Bolster (Dept. A.), 5A Station Parade, Ashford, Middx.

**B**ALSA Wood, Tissue, Dope, Cement, Rubber, etc. The Modeler's Postal Service. List from Foyurone Models, 31 Thirsk Road, London, S.W.11.

**W**OODTURNING for beginners. Complete guide including construction of a home-made lathe. 3/9 posted.—Quadrant Books (Dept. 4), 17 Quadrant Arcade, Regent Street, London, W.1.

**A**MERICAN Magazines post free for one year. Popular Mechanics, 32/-; Popular Science, 28/6; Mechanix Illustrated, 22/6; Popular Homecraft, 18/-. Stamp for full list of others.—Willen Ltd. (Dept. 57), 101 Fleet Street, London, E.C.4.

**E**NTER the Juneero National Model Making Competition. Cash and kit prizes to the value of £150. Send now for details or see the Juneero Annual, 1/- from all Juneero Dealers or 1/2 post free from Juneero Ltd., Boreham Wood, Herts.

**B**E taller in 14 days or money back. Details, 1d.—Stebbing System, 28 (HB) Dean Road, London, N.W.2.

**South West Africa etc.**  
**FREE**

**SOUTH WEST AFRICA**

To get this wonderful Free Gift Packet, just ask to see our Approvals (no obligation to purchase any), ask for S.W.A., etc., free, and enclose 3d. stamp to cover our postage.

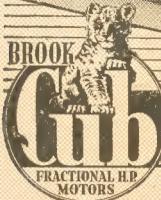
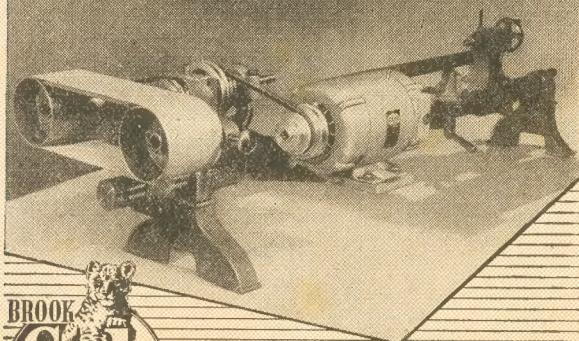
**WINDSOR STAMP CO. (12) Uckfield, Sussex**

**P**LYWOOD offcuts. Birch and Gaboon in various thicknesses. Handy sized parcels for the cabinet, toy, model maker and all handicrafts. Parcels made up in £1 and 10/- lots. Carriage paid. Send P.O. to Reeves, Plywood and Timber Merchant, 33 Front Street, Monkseaton, Whitley Bay. Tel. W.B. 4677. Due to exceptional demand we cannot promise delivery under eight days.

**£5** to £20 weekly earned at home running your own Mail Order business. Details, 1d.—Stebbing Publications Ltd. (HB), Naphill, High Wycombe.

MENTION HOBBIES WHEN REPLYING

## THE DEPENDABLE



"FRACTIONAL"

The Coronet Tool Company of Derby, makers of the lathe shown in our illustration, fit Brook 'Cub' Motors

A sound machine with a reliable driving unit—The one motor is easily interchangeable for driving the lathe and all its attachments.



EMPIRESS WORKS

HUDDERSFIELD

1.HM.148

## YOU CAN BECOME A HANDICRAFTS INSTRUCTOR

Experience not essential

Men who enjoy making things in wood or metal can turn their hobby into a well-paid, permanent and interesting Career. Short hours, long holidays, and security in a job you would really enjoy, can be yours if you become a Handicrafts Instructor. Let us send details of the easiest and quickest way to get the necessary qualification.

We definitely guarantee

**"NO PASS — NO FEE"**

If you would like to know about our unique method of preparing you for one of these excellent appointments, write today and we will send you our informative 176-page Handbook—free and without obligation. Mark your letters "Handicrafts Instructor".

**BRITISH INSTITUTE OF  
ENGINEERING TECHNOLOGY**

595 Shakespeare House  
Stratford Place, London, W.I

**BIET**

## DOLL'S HOUSE

How to make in a simplified step-by-step manner a desirable four room Doll's House with electric light and separate garage if required

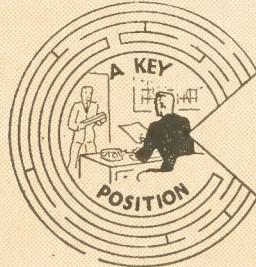
### ALL MATERIAL EASILY OBTAINABLE

Send a 2/6 P.O. now for complete Plan and instructions Doll's House Paper and Doors and Windows, which open, are available. Send S.A.E. for list.

TRADE INQUIRIES INVITED

**ZIMPLAN** 88 WARE ROAD  
HODDESDON, HERTS.

## DON'T WANDER IN CIRCLES



**GET THERE  
- DIRECT!**

The quickest way to the top is by studying at home in your spare time, guided by the world's most successful correspondence college. Individual tuition by experts fits you for highly paid key positions, prosperity and an assured future. Write TODAY for FREE advice on the work that interests you, on the coupon below.

## CHOOSE YOUR CAREER

Accountancy Exams.	Engineering.	Radio Service Engineering
Agriculture	All branches. Subjects and Exams.	Radio (Short Wave)
Applied Mechanics	General Education	Road Making and Maintenance
Auctioneers and Estate Agents	G.P.O. Eng. Dept.	Sanitation
Aviation (Engineering and Wireless)	Heating and Ventilating	School Attendance Officer
Blue Prints	Institute of Housing	Secretarial Exams.
Boilers	Institute of Municipal Engineers	Sheet Metal Work
Book-keeping, Accountancy, and Modern Business Methods	Journalism	Shipbuilding
Builders' Quantities	Languages	Shorthand (Pitman's)
Building, Architecture, and Clerk of Works (A.R.I.B.A. Exams.)	Mathematics	Short Story Writing
Carpentry and Joinery	Matriculation	Social Welfare
Chemistry	Metallurgy	Speaking in Public
Civil Engineering	Mining. All Subjects	Structural Engineering
Civil Service	Mining. Electrical Engineering	Surveying (R.I.C.S. Exams.)
All Commercial Subjects	Motor Engineering	Teachers of Handicrafts
Commercial Art	Naval Architecture	Telecommunications (City and Guilds)
Common Prelim. E.J.E.B.	Novel Writing	Television
Concrete and Structural Engineering	Plastics	Transport Inst. Examinations
Draughtsmanship.	Play Writing	Viewers, Gaugers Inspectors
All branches	Plumbing	Weights and Measures Inspectors
	Police, Special Course	Wireless Telegraphy and Telephony
	Preceptors, College of Press Tool Work	Surveyors Exams. Works Managers
	Pumps and Pumping Machinery	
	Quantity Surveying	
	Inst. of Quantity Surveyors	

If you do not see your requirements above, write to us on any subject. Full particulars free.

## COUPON. CUT THIS OUT

IF YOU ATTEND TO THIS NOW  
IT MAY MAKE A WONDERFUL  
DIFFERENCE TO YOUR FUTURE.

To DEPT. 62

**THE BENNETT COLLEGE LTD.  
SHEFFIELD**

Please send me (free of charge)

Particulars of.....

Your private advice

about .....

PLEASE WRITE IN BLOCK LETTERS

Name.....

Address.....

{ Cross out  
line which  
does not  
apply